

METHOD FOR EXTENDING A NETWORK MAP

ABSTRACT OF THE DISCLOSURE

An intelligent traffic redirection system performs global load balancing. The system uses a network map that is generated in part by extending a “sparse” IP address data map. In particular, a method of extending an IP address block map begins by defining a set of one or more upper bound block(s). These upper bound blocks are then used to partition a space of IP addresses into subsets or “territories”, wherein each territory represents a largest set of IP addresses to which a piece of mapping data may be extended.

The “piece” of mapping data typically consists of a host (usually a “name server” identified by the core point discovery process) IP address and some data about that host, namely, a “nearest” data center or a flag indicating that either “no data” exists for that host or that the system is “indifferent” as to which of a set of mirrored data centers the host should be mapped. A unification algorithm partitions the territory of each upper bound block into the largest possible sub-blocks in which a given unanimity criterion is satisfied and extends the mapping data in each such sub-block to all of the territory of that sub-block.